ZAKHARIKIN, L.I.; STANKO, V.I.; BRATTSEV, V.A., CHAPOVSKIY, Yu.A.;
        STRUCHKOV, Yu.T.

Structure of $B_{10}C_2H_{12}$ ("baren") and its derivatives. Izv. AN
SSSR. Ser. khim. no.11:2069 N '63.   (MIRA 17:1)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.

AVOYAN, R.L.; STRUCHKOV, Yu.T.

Crystal structure of 4-chloro-5-bromoacenaphthene. Zhur.strukt.khim.
4 no.4:631-633 Jl-Ag '63.   (MIRA 16:9)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.
                (Acenaphthene crystals)

AVOYAN, R.L.; KITAYGORODSKIY, A.I.; STRUCHKOV, Yu.T.

Crystal structure of 5,6-dichloro-11,12-diphenylnaphthacene. Zhur. strukt.khim. 4 no.4:633-636 Jl-Ag '63.   (MIRA 16:9)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.
(Naphthacene crystals)

AKOPYAN, Z.A.; AVOYAN, R.L.; STRUCHKOV, Yu.T.

Space groups and unit cells of organic compounds. Part 2: Peri-
disubstituted naphthalenes. Zhur.strukt.khim. 4 no.5:772   S-O
'63.   (MIRA 16:11)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.

OSIPOVA, O.P.; STRUCHKOV, Yu.T.; Prinimala uchastiye Kon'kova, G.S.

Space groups and unit cells of organic compounds. Zhur.strukt.
khim. 4 no.5:770-772 S-O '63.   (MIRA 16:11)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.

ZAKHAROVA, G.N.; AVOYAN, R.L.; STRUCHKOV, Yu.T.

Structure of the products of iodination of acenaphthene with
iodine monochloride. Zhur.strukt.khim. 4 no.6:928-930 N-D
'63.   (MIRA 17:4)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.

KHOTSYANOVA, ..., ...V, Yu.T.

Crystalline and molecular structure of 2,6-dichloronaphthalene.
Zhur. strukt. khim. 5 no.3:404-406 My-Je '64.

(MIRA 18:7)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.

AVOYAN, R.L.; STRUCHKOV, Yu.T.

Steric hindrances and the conformation of molecules. Report 8:
Structure of a 3-chloro-5-bromoacenapnthene crystal and molecule.
Zhur. strukt. khim. 5 no.3:407-419 My-Je '64.

(MIRA 18:7)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.

ANOVA., ...; KILBANOVSKIY, A.I.; SIMONOV, Yu...

Steric hindrances and conformation of molecules. Report 9:
Structure of a 5,6-dichloro-11,12-diphenylnaphthacene crystal
and molecule. Zhur. strukt. khim. 5 no.3:420-439 My-Je '64.
(MIRA 18:7)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.

AKOPYAN, Z.A.; STRUCHKOV, Yu.T.

Steric hindrances and conformation of molecules. Report 10:
Crystal structure of 1,8-dinitronaphthalene. Zhur. strukt.
khim. 5 no.3:496-497 My-Je '64.   (MIRA 18:7)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.

KALUSKI, Z.L.; STRUCHKOV, Yu.T.; AVOYAN, R.L.

X-ray diffraction study of diferrocenyl. Zhur. strukt. khim.
5 no.5:743-758 S-O '64   (MIRA 18:1)

1. Universitet imeni Adama Mitskevicha, Poznan', Pol'sha, i
Institut elementoorganicheskikh soyedineniy AN SSSR.

L 28728-65 EWT(m)/EWP(j)/EWP(b)/T/EWP(t) Pc-4 IJP(c) JD/JG/RM

ACCESSION NR: AP5004337 S/0070/65/010/001/0021/0028

AUTHOR: Bel'skiy, N. K.; Struchkov, Yu. T.

TITLE: Crystal structure and optical properties of europium chloride hexahydrate $EuCl_3 \cdot 6H_2O$

SOURCE: Kristallografiya, v. 10, no. 1, 1965, 21-28

TOPIC TAGS: crystal structure, optical property, europium compound, x ray structure study, refractive index, optical axis, crystal syngony

ABSTRACT: As a sequel to an investigation made by one of the authors (Bel'skiy, Dokl. AN SSSR v. 143, no. 6, 1313, 1962) of the absorption and dispersion of light in crystals of rare-earth element salts, a complete x-ray structural investigation was made of crystals of hexahydrate of europium chloride. The preliminary results presented in the earlier paper are refined and corrected. The crystals were grown from aqueous solutions, and had a monoclinic syngony with a = 9.67, b = 6.52, c = 7.99 $\overset{\circ}{A}$, β = 94°36', N = 2, space group P2/n. The structure is made up of "complex" cations $[Eu^{3+}(H_2O)_6Cl_2]^+$ and of isolated Cl^- ions, with the cations and anions occupying frequent positions on the two-fold symmetry axes. All the

Card 1/2

L 28728-65

ACCESSION NR: AP5004337   3

shortest distances in the structure correspond to the sums of the ionic radii or
the hydrogen bonds between the water molecules. The dispersion of three principal
refractive indices of the crystal was measured in the visible region of the
spectrum. The values obtained for D-line of sodium are $n_g = 1.5815$, $n_n = 1.5784$,
and $n_p = 1.5702$. The angle of the optical axis was $69°$. The directions of the
absorbing magnetic and electric dipoles and of the refractive-index indicatrix
axis were determined relative to the unit-cell axis and to the positions of the
atoms in the unit cell. It is concluded that the quantities connected with the
refractive index depend essentially on the arrangement of the water molecules
around the Eu^{3+}, whereas the directions of the absorbing dipoles are more strongly
influenced by the chlorine atoms that are closest to the ion. "The authors are
deeply grateful to Academician I. V. Obreimov and Professor A. I. Kitaygorodskiy
for continuous interest in the work." Orig. art. has: 7 figures, 3 tables, and
1 formula.

ASSOCIATION: Institut elementoorganicheskikh soyedineniy AN SSSR (Institute of
Organoelemental Compounds AN SSSR).

SUBMITTED: 31Mar64   ENCL: 00   SUB CODE: SS, OP

NR REF SOV: 008   OTHER: 003 -

Card 2/2

STAROVSKIY, O.V.; STRUCHKOV, Yu.T.

X-ray structural analysis of the $Co_2C_{25}H_{24}$ compound. Zhur. strukt. khim. 6 no.2:248-261 Mr-Ap '65. (MIRA 18:7)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.

L 55023-65   EWA(k)/EWT(1)/EWT(m)/EPF(c)/EWP(j)/EEC(t)   Pc-4/Pr-4   LHB/JAJ/RM
ACCESSION NR: AP5011829   UR/0192/65/006/002/0316/0318
                                                     548.737

AUTHORS: Kaluski, Z. L.; Struchkov, Yu. T.

TITLE: X-ray diffraction investigation of terferrocenyl

SOURCE: Zhurnal strukturnoy khimii, v. 6, no. 2, 1965, 316-318

TOPIC TAGS: x ray diffraction, terferrocenyl, prismatic body

ABSTRACT: The present investigation is an extension of previous work of Z. L. Kaluski, R. L. Avoyan, and Yu. T. Struchkov (Zh. struk. Khimii, 3, 599, 1962). The unit cell parameters were determined by crystal-rocking technique and inverse lattice photography. Nonfiltered copper radiation was used; the density was determined by Thoulet solution method

$$a = 13.23 \pm 0.05 \text{ A} \qquad M = 554.($$
$$b = 6.16 \pm 0.02 \qquad d \text{ exp.} = 1.61$$
$$c = 27.38 \pm 0.04 \qquad d \text{ calc.} = 1.66$$
$$\beta = 98.0° \pm 0.3° \qquad N = 4$$
$$V = 2210 \text{ A}^3$$

Intensities of reflections were estimated visually. Nonfiltered Mo radiation

Card 1/2

L 55023-65

ACCESSION NR: AP5011829

was used for this purpose. The determination of the hOl projection was carried out by standard heavy atom analysis. A centrosymmetric C2/c space group was assumed in the calculations. The final distribution $\rho(\chi z)$ is shown on Table 1 on the Enclosure. The deviation factor $R_{hOl} = 0.22$ for $B = 2.1 \text{ Å}^2$. According to electron density distribution, the "central" sandwich $Fe_{(1)}$ has an antiprismatic conformation whereas the conformation of the "outer" sandwiches $Fe_{(2)}$ and $Fe'_{(2)}$ is almost prismatic (see Fig. 1 on the Enclosure). The authors are grateful to V. N. Drozd for the sample of terferrocenyl, to R. L. Avoyan for his help at all stages during this investigation and, to A. I. Kitaygorodskiy for his advice and encouragement. Orig. art. has: 2 tables, 1 graph, and 1 illustration.

ASSOCIATION: Universitet im. Adama Mitskevicha, Posban', Pol'sha (Poznan University, Poland) ;Institut elementoorganicheskikh soyedineniy AN SSSR (Institute for Organoelemental Compounds, AN SSSR)

SUBMITTED: 25Dec64   ENCL: 02   SUB CODE: SS,OP

NO REF SOV: 005   OTHER: 000

Card 2/4

STRICHKOV, Yu.T.

Studies of the Section of X-ray Structural Analysis and Crystal
Chemistry of the **Eighth** Scientific and Technological Conference
on the Use of X Rays in the Analysis of Materials. Kristallogra-
fiia 10 no.3:45-454 My-Je '65.   (MIRA 18:7)

BAICZEL, Z.F.; STRUCHKOV, Yu.T.

Crystal and molecular structure of diethyldiferrocenyl. Zhur.
strukt. khim. 6 no.1:164-172 Ja-F '65.

(MIRA 18:12)

1. Universitet imeni Mara Mitskevicha Poznan', Pol'sha i
Institut elementoorganicheskikh soyedineniy AN SSSR. Sub-
mitted November 4, 1964.

DAVYDOVA, M.A.; STRUCHKOV, Yu.T.

Steric hindrance and conformation of molecules. Report No.11:
Structure of the crystal and molecule of dibromodichloronaph-
thalene. Zhur. strukt. khim. 6 no.1:113-122 Ja-F '65.
(MIRA 18:12)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.
Submitted November 3, 1964.

KALUSKI, Z.L.; STRUCHKOV, Yu.T.

X-ray structural study of bis-(chloroferrocenyl). Zhur. struk. khim.
6 no.3:475-476 My-Je '65.   (MIRA 18:8)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.

L 47757-65   EWT(m)/EPF(c)/EPR/EWP(j)/T   Pc-4/Pr-4/Ps-4   RPL   WW/JWD/RM

ACCESSION NR: AP5013149   UR/0079/65/035/005/0930/0931

AUTHOR: Stanko, V. I.; Struchkov, Yu. T.

TITLE: Structure of barene

SOURCE: Zhurnal obshchey khimii, v. 35, no. 5, 1965, 930-931

TOPIC TAGS: barene, carborane, barene derivative, barene structure

ABSTRACT: The authors are conducting a close study of the crystalline structure of such barene (carborane) derivatives as $HCB_{10}H_9CLCH$, $HCB_{10}H_8Br_2CH$, $HCB_{10}H_9ICH$, and of the neobarene (neocarborane) neo-$HCB_{10}H_8I_2CH$. Study of the crystalline structure of $C_6H_5—CB_{10}H_9ICH$ (I) showed that its crystals belong to the $P2_1/C$ space group of the monoclinic system (a = 7.34 Å; b = 7.39 Å; c = 27.72 Å; β = 102.30°; N = 4). From the three-dimensional series of electron densities it was found that the molecule of compound I has an icosahedral framework (see Fig. 1 of the Enclosure). All the bonds of the icosahedron are 1.7 ± 0.1 Å long. The icosahedral arrangement is nearly regular in spite of the presence of C—C and B—C bonds. Orig. art. has: 1 figure.
                                                                    [BO]

ASSOCIATION: none

Card 1/3

AKOPYAN, Z.A.; KITAYGORODSKIY, A.I.; STRUCHKOV, Yu.T.

Steric hindrances and conformation of molecules. Report No.12:
Crystalline and molecular structure of 1,8-dinitronaphthalene.
Zhur. strukt. khim. 6 no.5:729-744 S-O '65.

(MIRA 18:12)

1. Institut elementoorganicheskikh soyedineniy AN SSSR. Sub-
mitted July 15, 1965.

KALUSKI, Z.L.; STRUCHKOV, Yu.T.

Crystalline and molecular structure of dichlorodiferrocenyl.
Zhur.strukt.khim. 6 no.5:745-754 S-O '65.

(MIRA 18:12)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.
Submitted July 15, 1965.

AVOYAN, R.L.; ZAKHAROVA, G.N.; AKOPYAN, Z.A.; STRUCHKOV, Yu.T.

X-ray diffraction study of some organosilicon compounds.
Zhur.strukt.khim. 6 no.5:792-793 S-0 '65.

(MIRA 18:12)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.
Submitted June 20, 1965.

BOKIY, N.G.; AVOYAN, R.L.; ZAKHAROVA, G.N.; MINASYAN, M.Kh.; AKOPYAN, Z.A.;
STRUCHKOV, Yu.T.

X-ray diffraction investigation of some organometallic
compounds. Zhur.strukt.khim. 6 no.5:795-796 S-O '65.
(MIRA 18:12)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.
Submitted June 25, 1965.

BOKIY, N.G.; STRUCHKOV, Yu.T.

Crystalline structure of 1,1,4,4-tetramethyl-2,3,5,6-tetraphenyl-1,'-disilica-2,5-cyclohexadiene. Zhur. strukt. khim. 6 no. 4: 571-578 Jl-Ag '65 (MIRA 19:1)

1. Institut elementoorganicheskikh soyedineniy AN SSSR. Submitted April 10, 1965.

L 34611-6   EWT(m)/EWP(j)   RM
ACC NR: AP6026576   SOURCE CODE: UR/0192/65/006/006/0921/0922

AUTHOR: Kaluski, Z. L.; Struchkov, Yu. T.

ORG: Institute of Elemento-organic Compounds AN SSSR (Institut elementoorganicheskikh soyedineniy)

TITLE: Structure of bis-acetylferrocenyl

SOURCE: Zhurnal strukturnoy khimii, v. 6, no. 6, 1965, 921-922

TOPIC TAGS: molecular structure, ferrocene, organic solvent, crystallization, x ray diffraction pattern

ABSTRACT: Recently, preliminary data has been obtained on the structure of bis-acetylferrocenyl ($CH_3COC_5H_4FeC_5H_4$)$_2$, presented in the report. When present in xylene, toluene, and other common organic solvents, bis-acetylferrocenyl crystallizes as dark-red needles, elongated along axis a (m.p. 188-188.5°; the compound is wholly stable). Parameters of the unit cell and space group were determined from X-ray diffraction patterns and through photographing the reciprocal lattice with unfiltered copper radiation. The reflection intensities of the 0kl type (104 independent nonzero reflections) were evaluated visually from the X-ray diffraction pattern taken on a reciprocal lattice camera. The corresponding projection of structure was deciphered by the heavy atom method (Patterson series, yielding coordinates of the iron atom and three approximations of the electron density series).
The authors thank V. N. Drozd for submitting the preparation for the research and Professor A. I. Kitaygorodskiy for interest in the work. Orig. art. has: 1 figure and 1 table. [JPRS: 36,455]

SUB CODE: 20, 07 / SUBM DATE: 25Jun65 / ORIG REF: 004

Card 1/1   UDC: 548.737

L 09857-67   EWP(j)/EWT(m)/EWP(e)/EWP(t)/ETI   IJP(c)   RM/WW/JW/JWD/JD
ACC NR: AP6013742   SOURCE CODE: UR/0192/65/006/006/0923/0925

AUTHOR: Struchkov, Yu. T.; Stanko, V. I.; Klimova , A. I.; Kon'kova, G. S.   49

ORG: Institute of Elementoorganic Compounds, AN SSSR (Institut elementoorganicheskikh soyedineniy AN SSSR)

TITLE: X-ray diffraction of some derivatives of borane and neoborane

SOURCE: Zhurnal strukturnoy khimii, v. 6, no.6, 1965, 923-925

TOPIC TAGS: inorganic synthesis, borane, crystal structure, x ray diffraction

ABSTRACT: The crystalline structure of a series of boranes and neoboranes was studied by X-ray diffraction. The cell parameters, density, spatial configuration, and crystal forms were tabulated for B-dichloroborane, B-bromoborane, B-iodoborane, B-diiodoborane, B-triiodoborane, B-dichloro-C-methylborane, B-trichloro-C-methylborane, B-dibromo-C-methylborane, I-bromo-2-borenylethane, C-(p-bromophenyl)borane, bis(C-vinylborenyl)mercury, C-vinylborenyl methyl mercury, B-iodoneoborane, B-diiodoneoborane, and B-decachloroneoborane. The authors express their gratitude to R. L. Avoyan for assistance in the X-ray study and to V. I. Bregadza for preparation of the two mercury compounds.
Orig. art. has: 1 table.

SUB CODE: 07/ SUBM DATE: 01Jul65/ ORIG REF: 001

Card 1/1   UDC: 548.737

L 3_____-65   _____   RM

ACC NR: AP6026866   SOURCE CODE: UR/0192/66/007/001/0131/0133

AUTHOR: Kaluski, Z. L.; Avoyan, R. L.; Struchkov, Yu. T.

ORG: Institute of Organoelemental Compounds AN SSSR (Institut elementoorganicheskikh soyedineniy AN SSSR)

TITLE: X-ray analysis of substituted ferrocenes

SOURCE: Zhurnal strukturnoy khimii, v. 7, no. 1, 1966, 131-133

TOPIC TAGS: substituent, ferrocene, x ray analysis, physical chemistry property, chemical compound, molecular structure

ABSTRACT: The paper is a continuation of previous work on the structure of sandwich compounds. Various substituted ferrocenes synthesized in the laboratory of Academician A. N. NESMEYANOV were subject to x-ray analysis. Physical properties including color, melting point, geometric shape, lattice parameters, molecular weight, density, symmetry group etc. are given for the following compounds: phenylferrocene, n-chlorophenylferrocene, n-tolylferrocene, alpha-pyrrylferrocene, N-pyrrylferrocene, alpha-thienylferrocene, tetra-ter-butylferrocene, bis-chloroferrocenyl and bis-carbomethoxy-ferrocenyl. [JPRS: 36,455]

SUB CODE: 07 / SUBM DATE: 15Oct65 / ORIG REF: 006

Card 1/1   UDC: 548.737

L 35313-66   EWT(m)/EWP(j)   RM

ACC NR: AP6026867   SOURCE CODE: UR/0192/66/007/001/0133/0135

AUTHOR: Bokiy, N. G.; Struchkov, Yu. T.

ORG: Institute of Organoelemental Compounds, AN SSSR (Institut elementoorganicheskikh soyedineniy AN SSSR)

TITLE: Crystal structure of 1,1,4,4-tetraphenyl-1,4-digermanacyclohexadiene-2,5

SOURCE: Zhurnal strukturnoy khimii, v. 7, no. 1, 1966, 133-135

TOPIC TAGS: crystal structure analysis, phenyl compound, cyclic group

ABSTRACT: The authors studied the crystal structure of the compound $(C_6H_5)_2$ $Ge(CH)_4Ge(C_6H_5)_2$ which contains an almost flat six-membered heterocycle and is consequently named 1,1,4,4-tetraphenyl-1,4-digermanacyclohexadiene-2,5. Crystals in the form of colorless plates were prepared from a benzene solution. The cell parameters of these triclinic crystals are given. Y. G. DULOVA and M. Ye. Vol'pin collaborated in the work. Orig. art. has: 2 figures and 1 table. [JPRS: 36,455]

SUB CODE: 07 / SUBM DATE: 20Oct65 / ORIG REF: 003

UDC: 548.737

Card 1/1

AUTHOR: Dashevskiy, V. G.; Struchkov, Yu. T.; Akopyan, Z. A.

ORG: Institute of Organometallic Compounds, AN SSSR (Institut elementoorganicheskikh soyedineniy AN SSSR)

TITLE: Conformations of strained aromatic nitro compounds

SOURCE: Zhurnal strukturnoy khimii, v. 7, no. 4, 1966, 594-602

TOPIC TAGS: aromatic nitro compound, chemical bonding, substituent, stereochemistry

ABSTRACT: Conformations of a series of strained aromatic nitro compounds were calculated on the basis of a mechanical model of molecules developed by I. Kitaygorodskiy (Tetrahedron, 14, 230, 1961) and supplemented with additional assumptions. The potential curves and elastic constants necessary for the calculation are given. Analysis of the conformations of nitro derivatives of benzene from the least to the most strained structures shows that small rotations of the nitro groups cannot be predicted by conformational calculations based on the consideration of intramolecular interactions; however, in highly strained molecules, the energy of intramolecular interactions substantially exceeds the energy of the crystal field, and the accuracy of conformational predictions increases with the straining. The geometry of the 2,3,4,5-tetranitrobenzene molecule and the conformations of ortho-halonitrobenzenes are calculated. In a discussion of nitro derivatives of naphthalene and anthracene, it is

UDC: 541.636

Card 1/2

ACC NR: AP6029614

pointed out that calculations of the conformations of the highly strained molecules of 1-halo-8-nitronaphthalenes are of predictive value, and it is shown that as the volume of the substituent (Cl, Br, I) increases, the rotation of the nitro group decreases. It is concluded that in most cases (at angles of rotation of nitro groups ranging from 15 to 60°), conformational analysis yields fully satisfactory results when used for predicting the geometry of strained aromatic molecules containing nitro groups. However, when the strains are too low, it becomes necessary in ideal models to allow for packing effects of molecules in crystals and the possible formation of hydrogen bonds. Authors express their thanks to Prof. A. I. Kitaygorodskiy for his interest in the work. Orig. art. has: 6 figures, 3 tables, and 11 formulas. [27]

SUB CODE: 07/ SUBM DATE: 15Apr66/ ORIG REF: 005/ OTH REF: 016/ ATD PRESS: 5082

Card 2/2

STRUCHKOVA, M. I.

S/062/62/000/011/005/021
B101/B144

AUTHORS: Nesmeyanov, A. N., Kochetkova, N. S., Vil'chevskaya, V. D.,
            Sheynker, Yu. N., Senyavina, L. B., and Struchkova, M. I.

TITLE: o-Carboxy- and o-hydroxy benzoyl ferrocene and their
            derivatives

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Otdeleniye khimicheskikh
            nauk, no. 11, 1962, 1990 - 1996

TEXT: The IR and UV spectra of the following compounds were studied:
o-carboxy benzoyl ferrocene (A); o-hydroxy benzoyl ferrocene (B) synthesized
from salicyl chloride and ferrocene in the presence of $AlCl_3$ in CH_2Cl_2
solution at 45 - 50°C; o-methoxy benzoyl ferrocene (C) obtained by
methylating B with dimethyl sulfate, yield 96%; o-acetoxy benzoyl ferrocene
(D) obtained by acetylating B with acetic anhydride, yield 95%; o-hydroxy
benzyl ferrocene (E) obtained by reducing B with zinc amalgam, yield 77%;
o-methoxy benzyl ferrocene (F) obtained by methylating E with dimethyl
sulfate, yield 94%; o-hydroxy phenyl ferrocenyl carbinol (G) obtained by
reducing B with $LiAlH_4$, yield 90%; and o-methoxy ferrocenyl carbinol (H)

Card 1/3

obtained by methylating C with dimethyl sulfate, yield 93%. Ethers of the
type $C_{10}H_9Fe\text{-}CH(OR)\text{-}C_6H_4OH$ were obtained by recrystallising C in the
corresponding alcohols. For R = CH_3, the m.p. was 119 - 120°C, the yield
89%; for R = C_2H_5, m.p. 117°C, yield 94%; and for R = $i\text{-}C_3H_7$, m.p. 79-80°C,
yield 89%. The spectroscopic studies showed: (1) Both the crystallised
and the dissolved A showed no tautomerism by ring closure. The structure
of A is therefore open: $Fo\text{-}CO\text{-}C_6H_4$,(Fo = ferrocenyl), although in an

earlier study (Dokl. AN SSSR, 138, 390 (1961)) derivatives of the tautomeric

COOH

O-CO

form $Fo\text{-}C\text{-}C_6H_4$ were also synthesised from this compound. (2) With B there

OR

is also no hydroxy quinone tautomerism, but an intramolecular H bond

H

O   O

Fo - C - C_6H_4 is formed. There are 4 figures and 1 table. The most

Card 2/3

o-Carboxy- and o-hydroxy...

S/062/62/000/011/005/021
B101/B144

important English-language reference is: R. L. Schaaf, J. Organ. Chem., 27, 107 (1962).

ASSOCIATION: Institut elementoorganicheskikh soyedineniy Akademii nauk SSSR (Institute of Elemental Organic Compounds of the Academy of Sciences USSR). Institut khimii prirodnykh soyedineniy Akademii nauk SSSR (Institute of Chemistry of Naturally Occurring Compounds of the Academy of Sciences USSR)

SUBMITTED: April 4, 1962

Card 3/3

DVORYANTSEVA, G.G.; STRUCHKOVA, M.I.; SHEYNKER, Yu.N.

Integral intensities of infrared absorption bands of certain
characteristic vibrations of cyclopentadienyl rings in ferrocene
derivatives. Dokl. AN SSSR 152 no.3:617-620 S '63.

(MIRA 16:12)

1. Institut khimii prirodnykh soyedineniy AN SSSR. Predstavleno
akademikom A.N.Nesmeyanovym.

VATCHENKO, G. [Vatchenko, H.]; OGRYZKINA, O. [Ohryzkina, O.];
        STRUCHKOVA, N.; KHANIAS-NIBO, M.; CHERNYKH, O.; CHUMACHENKO, V.;
        SHEVCHENKO, G. [Shevchenko, H.]; DEMERDZHI, D., red.; SHTEYN, M.,
        red.; KOLOMOYTSEVA, F., tekhn.red.

[Dnepropetrovsk; reference-guidebook] Dnipropetrova'k; dovidnyk
putivnyk. Vyd.2., vypravlene i dop. Dnipropetrova'k. Dnipro-
petrova'ke knizhkove vyd-vo, 1959. 300 p.   (MIRA 13:8)

1. Dnepropetrovskiy gosudarstvennyy istoricheskiy muzey (for all,
except Demerdzhi, Shteyn, Kolomoytseva).
            (Dnepropetrovsk--Guidebooks)

ST CHE VA, V. I.

Instructions on methods of diagnosis and treatment for the most frequent acute surgical
diseases. Moscow, Medgiz, 1952. 51 p. (Ministerstvo zdravookhraneniia Soiuza SSR.

ABRAMYAN, A.Ya., prof.; BUSALOV, A.A., prof.; VELIKORETSKIY, A.N.,
        prof.; GROZDOV, D.M., prof.; DORMIDONTOVA, K.V., dots.;
        ZHMAKIN, K.N., prof.; KORNEV, P.G.; LEVIT, V.S.prof.
        [deceased]; LIKHACHEV, A.G., prof.; LOBACHEV, S.V., prof.;
        MOLODAYA, Ye.K., prof.; PETROV, B.A.; PRIOROV, N.N.[deceased];
        SALISHCHEV, V.E., prof. [deceased]; SAPOZHKOV, P.I., prof.
        [deceased]; TERNOVSKIY, S.D. [deceased]; FAYERMAN, I.L., prof.,
        zasl. deyatel' nauki; CHAKLIN, V.D.; CHENTSOV, A.G., prof.
        [deceased]; CHERNAVSKIY, V., prof.; SHADURSKIY, K.S., prof.;
        SHAKHBAZYAN, Ye.S., prof.; VELIKORETSKIY, A.N., prof., red.;
        GORELIK, S.L., dots., red.; YELANSKIY, N.N., red.; STRUCHKOVA,
        V.I., red.; RYBUSHKIN, I.N., red.; BUL'DYAYEV, N.A., tekhn.
        red.

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1. Chlen-korrespondent AMN SSSR (for Yelanskiy, Struchkova,
Petrov, Ternovskiy, Chaklin). 2. Deystvitel'nyy chlen AMN SSSR
(for Kornev, Priorov).

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1. Department of Organic Chemistry, University, Warsaw.

STRUCL, Ivan

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regard to the categorization of ore reserves. Geologija Slov 6:
251-278 '60 (publ.'61).

P___ _, J. C _ _____i, I. _____, A.
"Clinical(?) ___ _____ ___ ____ observations on the _____ compl__ and __ tubercu-
losis of ___ _____ ___ __. Tr. from the Russian." _. 60.
(Ap_lal- R_____v____n. Serie Pediatric., Series ___-_, v. _, no. 2, ___./ Apr.
1/55, _____ __st_)

SO: _onthl_ _i_t of _ast _uro_e_n Acces _ons, _ol. _, __. _, Libr_ry of Con_r__ , __pt___er
                                                          1/55, Uncl.

SMIRNOV, L.

IC T

. . . . Vol 7, . . 7, July 1958

. . . by the building materials industry.

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April 1959, Unclass

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Wiad elektrotechn 31 no.12:306-307 D'63.

18(7)

AUTHORS: Strug, Ye. M., Panchenko, Ye. V.

SOV/163-59-2-47/48

TITLE: Metallographic Investigation of the Alloys by the Method
              of the Micro-T.E.D.S. (Metallograficheskoye issledovaniye
              splavov metodom mikro-T.E.D.S.)

ABSTRACT: The micro-thermoelectromotive force was determined by the
              apparatus for the determination of the microhardness. The
              diamond point of the microhardness testing instrument was
              replaced by a tungsten point. The construction scheme is
              given in figure 1. The phase composition and the structures
              of the metals and alloys were as well determined by this
              apparatus. The following metals: manganese, iron, beryllium,
              niobium, titanium, cobalt, chromium, nickel, copper, alu-
              minum,and silicon, were investigated as well as the phases
              in iron alloys and the phases on the basis molybdenum. The
              suggested method is characterized by the following facts:
              a) higher sensitivity, b) elimination of the subjective factors,
              and c) simple apparatus so that the experiment can be easily
Card 1/2   carried out. There are 2 figures.

SOV/163-59-2-47/48

Metallographic Investigation of the Alloys by the Method of the Micro-T.E.D.S.

ASSOCIATION: Moskovskiy institut stali (Moscow Steel Institute)

SUBMITTED: August 15, 1958

Card 2/2

S/148/60/000/005/009/009

AUTHORS: Panchenko, Ye.V., Strug, Ye.M.

TITLE: Investigation of Iron- and Molybdenum-Base Binary and Ternary
             Alloys by the Method of Micro-Thermo-emf

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Chernaya metallurgiya,
             1960, Nr 5, pp 177 - 180

TEXT: There are no precise data available determining the dependence
of thermo-emf on the nature, the physical and chemical conditions of various
alloys. For the purpose of developing the utilization of the thermo-emf
method, the following binary and ternary iron- and molybdenum-base alloys
were studied: Fe-Cr (up to 26% Cr); Fe-Ni (up to 7% Ni); Fe-Mo (up to
20% Mo); Fe-Al-Mn (up to 16% Al and 6% Mn) prepared by N.G. Lakhman,
scientific worker; Mo-Ti (up to 64% Ti); Mo-Ta (up to 55% Ta). Micro
thermo-emf were measured with the aid of a tungsten needle by a method
described in Reference 2. Preliminarily, the alloys were insulated in
quartz ampoules and subjected to homogenizing annealing (8 hours at 1,200°C,
cooling in a furnace). Micro thermo-emf were measured at a constant difference

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S/148/60/000/005/009/009

Investigation of Iron- and Molybdenum-Base Binary and Ternary Alloys by the
Method of Micro-Thermo-emf

in temperatures of the specimen and the needle point and also in the same
temperature range. The dependence of micro thermo-emf of the aforementioned
alloys on their composition is represented by graphs. The investigation
showed that the micro thermo-emf method was sensitive with respect to various
changes in the physical and chemical conditions of the alloys, such as:
heterogeneity, phase changes, ordering of solid solutions etc. The method
allows one to determine the presence in the alloy of various phases and
structural constituents differing in the values of their micro thermo-emf.
In Fe-Al-Mn ternary alloys the authors revealed the additivity of changes
in micro thermo-emf of the ternary solutions with changing composition of
the ternary alloys; this allows one to determine the approximate chemical
composition of the developed new phases. Their presence in the alloy is
revealed by the sharp deviation of the course of the micro emf curves on the
graphs. There are: 3 graphs and 3 references, 2 of which are Soviet and 1 German.

ASSOCIATION: Moskovskiy institut stali (Moscow Steel Institute)

SUBMITTED: July 3, 1959

Card 2/2

VB

S/148/60/000/007/008/015
A161/A029

AUTHORS: Strug, Ye.M.; Krimer, B.I.; Panchenko, Ye.V.

TITLE: Determining Specific Electric Resistance on Specimens of Arbitrary
Shape

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Chernaya metallur-
giya, 1960, Nr 7, pp 125-128

TITLE: The improved Galender (Russian transliteration) spot resistance
method /Ref 2,3, English/ was used in experiments with specimens of Fe-Al
and W-Nb system alloys, and the results agreed with data of previous
studies of Fe-Al alloys available in literature. The essence of the
Galender method consists in measuring the voltage drop between two arbi-
trarily chosen points on the specimen surface. The article includes a
detailed description of the measuring device used (Figures 1 and 2), having
two brass bars and two contact needles. The measurement errors were not
higher than 0.002%, though current instability and inaccuracy of graduatias
raised it to 0.5-1.0%. A "ППТН-1" (PPTN-1) low-resistance potentiometer
was used for measurements. The instrument was graduated for different

Card 1/3

S/148/60/000/007/008/015
A161/A029

Determining Specific Electric Resistance on Specimens of Arbitrary Shape

metals and alloys (Figure 3). The slope angle of the straight line in (Figure 3) to the axis of the abscissa yields the coefficient α and is to be introduced into the formula $\rho = \alpha R_N \dfrac{V_x}{V_N}$ ohm $\cdot$ mm^2/m where R_N is the

standard resistance; V_x - the resistance drop on the specimen; V_N - the resistance drop on the standard resistance; α - the graduation coefficient; ρ - the specific electric resistance of material tested. The dependence of the instrument readings on the specimen thickness (d) is shown in (Figure 4), where it can be seen that from 4 mm and higher the thickness has no more effect. The method has been tried on Fe-Al (Figure 5) and W-Nb (Figure 6) alloys. The results coincided well with the available literature data for Fe-Al alloys. The method may be employed for determination of electric resistance in small specimens as well as specimens of brittle metals that are not easily machineable. It is mentioned that Engineer Yu.Ye. Matveyev participated in experiments with W-Nb alloys, and steel needles were used for potential contacts. There are 6 Figures and 4 references: 2 are Soviet and 2 English.

Card 2/3

S/148/60/000/007/00&/015
A161/A029

Determining Specific Electric Resistance on Specimens of Arbitrary Shape

ASSOCIATION: Moskovskiy institut stali (Moscow Steel Institute)

SUBMITTED: July 3, 1959

Card 3/3

20283

18.8200   1418

S/148/60/000/009/021/025
A161/A030

AUTHORS: Panchenko, Ye.V., and Strug, Ye.M.

TITLE: Investigation of the reversible temper brittleness phenomenon
by micro-t.e.m.f. method

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy.Chernaya metallurgiya,
no.9, 1960. 157-159

TEXT: Variations of micro thermo-e.m.f. of the internal volumes and
grain boundaries in 12Хн3А (12KhN3A) steel during tempering in critical
temperature ranges have been studied. The measurement method had been de-
scribed previously (Ref.5) (Ye.M.Strug, Ye.V.Panchenko, "Nauchnyye doklady
vysshey shkoly", Metallurgiya, 1959, No.2). Steel rods were annealed pre-
liminarily to grow austenite grain, in argon at 1200°C, then impact notch
specimens were cut from the rods. Specimens were quenched in oil from
910°C and subsequently tempered in 100, 200, 300, 400, 450, 500, 550, and
600° for 2 hrs. Part of the tempered specimens were placed in water (for
rapid cooling), the rest cooled with the furnace (slow cooling). Impact

Card 1/5

20283

Investigation of the reversible temper ..

S/148/60/000/009/021/025
A161/A030

strength was tested in a 15 kg impact machine. Hardness, electric resistance and micro-t.e.m.f. were measured on section, and apart from this , micro-t.e.m.f. was determined in the fracture (Fig.2). The micro-t.e.m.f. in the fracture (characterizing the property of boundaries) is marked $\left(\frac{dE}{dt}\right)_{\digamma}$. and on section (characterizing the internal grain volumes) with $\left(\frac{dE}{dt}\right)_{ui}$. As the curves show in (Fig2,a), the total soaking time (soaking proper + cooling time) has an effect on the variation of micro-t.e.m.f. difference in internal grain volumes of slow and fast cooled specimens. The effect is very noticeable at low tempering (up to $350^{0}C$) and decreases to zero with a further rise in temperature. The difference of micro-t.e.-m.f. in boundaries (Fig.2δ) becomes steeply negative towards $450^{0}C$, then decreases and even turns into positive after. The negative sign of the difference may be explained either by a decreasing absolute value of micro-t.e.m.f. in boundary volumes at slow cooling, $\left(\frac{dE}{dt}\right)_{p}^{n}$, or by only a relative rise in absolute micro-t.e.m.f. in boundary volumes at speeded up

Card 2/5

Investigation of the reversible te...r...
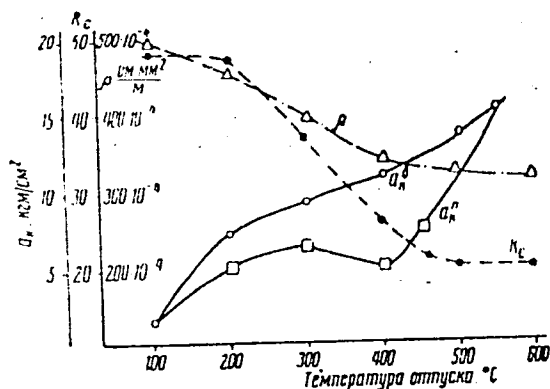
S/148/60/000/009/021/025
A161/A030

cooling. But the latter assumption is disproved by the measurement results. This means that in embrittled specimens the absolute micro-t.e.m.f. of boundary volumes drops compared with the boundary volumes of rapidly cooled specimens as well as with internal volumes of slowly cooled specimens. An analogous drop of absolute micro-t.e.m.f. values was observed in some ordering alloys (Fe-Al, Ni-Cr) in the corresponding treatment. Conclusions : 1) The investigation has revealed the high sensitivity of the method in revealing processes causing the reversible temper brittleness. 2) The comparison of the micro-t.e.m.f. in tempered specimens of 12KhN3A steel has revealed a considerable difference in the physical and chemical state of the boundary and internal volumes of previously austenitic grains in steel in brittle and in tough state. 3) A similarity has been stated in micro-t.e.-m.f. variations in grain boundaries of the 12KhN3A steel and some ordering alloys. There are 6 figures and 5 Soviet-bloc references.

ASSOCIATION: Moskovskiy institut stali (Moscow Steel Institute)

SUBMITTED: 3 July 1959

Card 3/5

Investigation of the reversible temper...

Fig. 1 – Variation of impact strength in slowly $\left(a_{K}^{\Pi}\right)$ and rapidly a_{K}^{Ξ} cooled specimens, electric resistance and hardness of 12KhN3A steel tempered after oil quenching from 910°C. (Impact strength in kg/cm²)
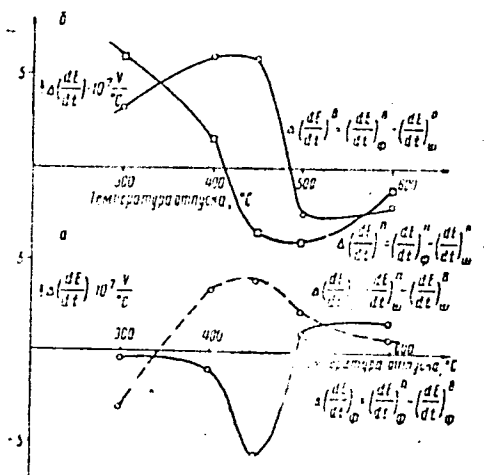
Card 4/5

Fig. 2 – Comparative micro-t.e.m.f. values in section and in fracture in specimens cooled differently after tempering; oil quenching from 910°C

Card 5/5

24215
S/148/61/000/001/019/015
A161/A133

24/146

AUTHORS: Pantanenko, Ye. V., and Strug, Yu. B.

TITLE: Influence of the Thermoelectromotive Force on Contact with Specimens

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Chernaya metallurgiya,
no. 1, 1961, 181-185

TEXT: The described experiments have been carried out to investigate
the effect of a third conductor in a thermocouple circuit on the thermo-
electromotive force. The general statement that the presence of a third conduc-
tor in a thermo emf measuring circuit does not influence the thermo emf val-
ue if both terminals of the third conductor have a constant temperature and
relate to the same temperature are placing in in the alloys Cu-Fe, Cu-Ni and
Fe-Ni. In pairs were initially coupled, and with three (Cu-Fe-Ni) welded to-
gether and measured in couples. Some difference in the thermo emf readings
of the couples was noticed and the following experiment carried out be-
cause of this. A specimen of R30 40 (Kh30N40) alloy (nichrome) was quenched
in water at 1130°C. A nichrome and a constantan wire were annealed and
welded to that nichrome specimen some from each other. Then the specimen

Card 1/3

Measuring the Thermoelectromotive Force ...   S/148/6?/000/001/015/015
                                                     A'6?/A153

was put into a furnace, and beside it a thermocouple made from the same
metal. The furnace temperature was measured with a chromel alumel thermo-
couple with known graduation. The heat was raised to about 50°/hr. The
thermoemf measurement results are shown in Fig. ? where it can be seen that
the curves are parallel up to 400 C but do not coincide. The slight differ-
ence ... due to quenching of the specimen. The curve of the
circuit with the specimen makes a bend in the 400 - 450°C range. It is
characteristic that this is the range where phase transformations (K-
state) take place in quenched Kh20N80 nichrome specimens. Apart from this,
the thermo emf was measured with same connection of pairs but using harden-
ed specimens from steel (12KhN3A) steel, and conductors from nichrome and
constantan, as well as from chromel and alumel. The results are illustrated
in Fig ? The thermoemf of the circuit with the steel specimen deflected
in two ranges 140 - 400° and 420 - 520°. The first deflection for 12KhN3A
steel starts at about 140 C and reaches the maximum at about 220°, then
joins the curve of the thermocouple at 380°. This deflection appears to be
connected with processes taking place in 12KhN3A steel during tempering af-
ter quenching. The second deflection starts at 420°C, rises to the maximum

Card 2/?

at 475°C, then evens out above 550°C. This thermo-emf behavior in 12KhN3A
steel resembles the variations in nichrome and is apparently due to revers-
ible temper brittleness. An attempt was made to trace kinetic tempering
curves for quenched steel at isothermic soaking (Fig. 2). Conclusions:
1) Thermo-emf measurements are possible in specimens of arbitrary shape at
continuous heating and isothermic holding. 2) The method makes possible
the examination of transformations in quenched steel during tempering; the
kinetics of structure transformations in hardened steel could be traced.
Kinetic thermo-emf curves are suitable to determine the optimum tempering
time for steel at a given temperature. 3) It is obvious that the process
of isothermic austenite decomposition can be studied with a simple and pre-
cise potentiometric unit that is more simple and more accurate than the
Akulov anisometer which is commonly used for the purpose. 4) The data lead
to a practical conclusion concerning the specimen assembly for examinations
at varying temperatures. The output and input potential conductors must be
made from one metal (alloy) and they must not be in a metastable state
(quenched, rapidly cooled). [Abstracter's note: Essentially full transla-
tion]. There are 2 figures.

Card 3/5

Measuring the thermoelectromotive force...
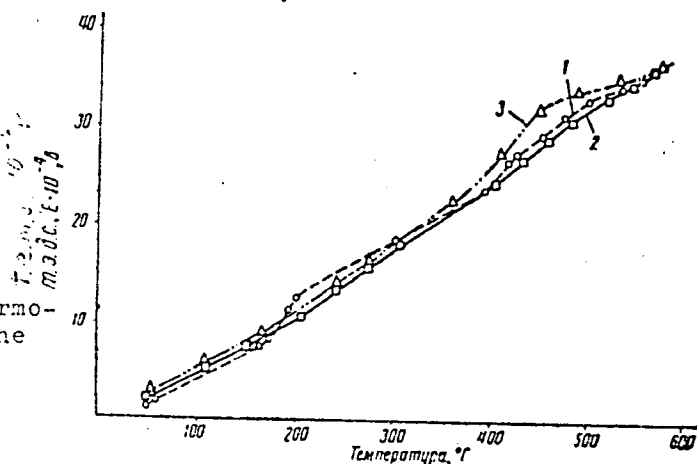
ASSOCIATION: Moskovskiy institut stali (Moscow Steel Institute)

SUBMITTED: July 3, 1959

Fig. 1. Thermo-emf
variations in Kh20N80
nichrome during temper-
ing after water-hardening
at 1,250°C, and in 12KhN3A
steel in tempering; oil-
hardening at 910°C

Legend: 1 - Circuit with
12KhN3A specimen; 2 -
the nichrome-constantan thermo-
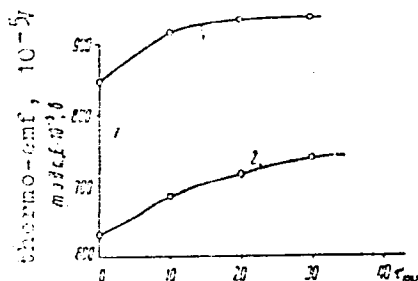couple; 3 - circuit with the
nichrome specimen.

Card 4/5

Measuring the thermoelectromotive force...

S/148/61/000/001/015/015
A161/A133

Fig. 2. Typical shape of kinetic
tempering curves for 12KhN3A steel
after oil-hardening at 910°C

Legend: 1 - at 250°C;
        2 - at 300°C.

Card 5/5

27239
S/148/61/000/003/010/015
A161/A133

I8.8100

AUTHORS: Myuller, N. N., Orlovskaya, Ye. Ye., Panchenko, Ye. V., Strug, Ye. M.

TITLE: On the anomalous change of chromium properties at room temperature

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Chernaya metallurgiya, no. 3, 1961, 134 - 137

TEXT: The results are given of an experimental investigation with chromium of different degree of purity along with references to data of two English-language publications concerning analogous studies. A chart gives the content of impurities in a few of the studied chromium specimens, determined by spectral and gas analysis The anomalous effect of volumetric changes in specimens with different impurity contents reached its maximum in the temperature range, of 20 - 46°C, and the observations confirmed the data of Fine, Greiner and Ellis (Ref. 1: J. Metals, 191, 56, 1951) in respect of the effect of impurities. Anomalous electric resistance behavior at different temperature points was also stated, as well as points of anomalous t.e.m.f. It is apparent that the anomalous electric resistance and t.e.m. f. variations are connected with a peculiar interaction of chromium electrons with the electrons of the impurity atoms and dislocations. The article includes three

Card 1/ 2

27239

On the anomalous change of chromium properties at r..   S/148/61/000/003/010/015
A161/A133

graphs showing dilatometric curves of chromium smelted under different conditions, dependence of the electric resistance on temperature, and the dependence of t.e.m. f. on the temperature in chromium that had been melted in different ways. Conclusions: 1) Anomalous changes of chromium properties (contraction of volume, drop of electric resistance and of t.e.m.f.) has been revealed in the temperature range of 20 - 46°C; 2) The nature of the anomalous effect of property changes and the temperature point of anomaly are connected with the purity of chromium and the anomaly is the more pronounced the purer the chromium. There are 3 figures, 1 chart, and 3 references: 1 Soviet-bloc and 2 non-Soviet-bloc. The two references to English language publications read as follows: Fine, Greiner, Ellis. J. Metals, 191, 56, 1951; Pursey, J. Inst. Met., April 1958, p 362.

ASSOCIATION: Moskovskiy institut stali (Moscow Steel Institute)

SUBMITTED: August 31, 1960

Card 2/2

L 19843-65   EWT(m)/EWA(d)/EPR/EWP(t)/EWP(k)/EWP(b)   Pf-4/Pa-4   IJP(c)
MJW /JD/HW

ACCESSION NR: AP4049070   S/0148/64/000/011/0155/0157

AUTHOR: Panchenko, Ye. V.; Strug, Ye. M.; Shchepot'yeva, G. P.

TITLE: Aging of alloys of the Cu-Al-Si system

SOURCE: IVUZ. Chernaya metallurgiya, no. 11, 1964, 155-157

TOPIC TAGS: copper alloy, aluminum containing alloy, silicon containing alloy, alloy
aging, alloy mechanical property, alloy electrical property, zirconium admixture

ABSTRACT: Copper Cu 1, Silicon Si 1, and aluminum ABO were smelted in a metal pot,
forged at 800-850C, cold rolled to a thickness of 1 mm, brought to 650C for 3 hours,
quenched from 870C, cold rolled with a reduction of 20-40%, and heated to study the kine-
tics of aging. The hardness, microhardness, specific electrical resistance, and thermo-
electromotive force were measured, the last by the method described by the authors in an
earlier work. The data obtained were plotted on a series of semi-log graphs, and from the
various curves it is evident that the final cold rolling of the alloys of the Cu-Al-Si system
ages them markedly. An increase in the deformation during milling speeds the aging. By

Card 1/2

L 19843-65

ACCESSION NR: AP4049070   2

increasing the silicon content, the hardness of the alloys and their ability to solidify are increased, while their resiliency decreases. Additional alloying with Zr increases the hardness and the temperature interval of aging. The method of measuring the microthermoelectromotive force appears delicate enough to show up any internal heterogeneities in the early stages of aging. Orig. art. has: 7 graphs, 1 photomicrograph, and 1 table.

ASSOCIATION: Moskovskiy Institut stali i splavov (Moscow Institute of Steel and Alloys)

SUBMITTED: 03Apr64   ENCL: 00

NO REF SOV: 002   OTHER: 000   SUB CODE: MM

Card 2/2

STRUG, Ye.M.; SAVCHENKO, Ye.V.

Aging of PBM-7-5 bronze during low-temperature annealing. Izv.
vysl ucheb. zav.; chern. met. 8 no.1:110-111 '65 (MIRA 18:1)

1. Moskovskiy institut stali i splavov.

L 37651-66   EWT(m)/T/EWP(w)/EWP(t)/ETI   IJP(c)   JH/JD

AUTHORS: Strug, Ye. M. (Member of metallography dept); Panchenko, Ye. V. (Member of metallography dept); Prokopinskaya, S. G. (Member of metallography dept)

ORG: Moscow Institute of Steel and Alloys. Department of Metallography (Moskovskiy institut stali i splavov. Kafedra metallografii)

TITLE: Study of the aging process in Cu-Al-Ti alloys

B

TOPIC TAGS: copper base alloy, copper film, metal aging, metal heat treatment, titanium containing alloy, aluminum containing alloy

ABSTRACT: The effect of aluminum on the aging process of copper alloys containing 1.5% Ti and from 0 to 4% Al has been studied. The alloys were smelted in a high-frequency furnace, and the ingots were forged at 800--900C and rolled into plates ~ 1 mm thick. Tempering was conducted by quenching from 920C in water, followed by aging from 15 min to 30 hours at 350, 400, and 450C. The experimental results are shown in Fig. 1. Addition of 2% Al facilitates the aging process. Higher Al content slows it down. These results are contrary to those reported by U. Zwicker (Metall, v.11, No.1, 1957; Z. Metallkunde, 53, 11, 1962), while the behavior of the alloys on varying the electrical resistance conforms to findings of Ye. G. Nesterenko and N. V.

Card 1/2   UDC: 669.35
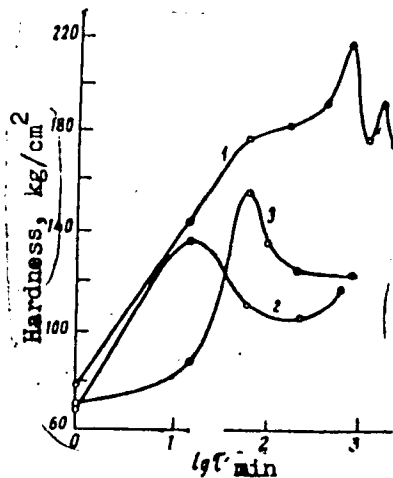
L 37651-66

ACC NR: AP6016336

Fig. 1. Hardness of alloys containing 1.5% Ti + 98.5% Cu (1), 1.5% Ti + 2% Al + 96.5% Cu (2), 1.5% Ti + 4% Al + 93.5% Cu (3) as a function of aging time at 450C.

Chuistov (Fizika metallov i metallovedeniye, t. 9, v. 3, 1960; t.12, v.5, 1961). Orig. art. has: 1 figure.

SUB CODE: 07/   SUBM DATE: 01Jul64/   ORIG REF: 003/   OTH REF: 001

Card 2/2

ACC NR: AP7002865   SOURCE CODE: UR/0149/66/000/006/0134/0138

AUTHORS: Prokopinskaya, S. G.; Panchenko, Ye. V.; Strug, Ye. M.

ORG: Moscow Institute of Steel and Alloys. Department of Metallography (Moskovskiy institut stali i splavov. Kafedra metallografii)

TITLE: Aging process kinetics in copper alloys with titanium and aluminum additives

SOURCE: IVUZ. Tsvetnaya metallurgiya, no. 6, 1966, 134-138

TOPIC TAGS: copper base alloy, aluminum containing alloy, titanium containing alloy, metal aging, solid kinetics, aluminum, copper, metal heat treatment/AV000 aluminum, M-1 copper

ABSTRACT: Kinetics of copper alloys containing 1.5% Ti (I), 4.3% Ti (II), and 1.5% Ti + 2% Al (III) was studied by analyzing the curves of hardness, the microhardness, and specific electrical resistivity after aging the specimens from 0.25 to 8 hours at 350, 400, and 450C. The alloys were smelted in a high-frequency furnace under cryolite. The charge consisted of Cu-Ti alloy (14.2% Ti), Al AV000, and Cu M-1. After forging at 800—900C and cold rolling into sheets 1 mm thick, the alloys were quenched from 920C in water, and then aged. The aging temperature range was selected to avoid the slow process at low temperatures and overaging at high temperatures. It was established that aging of III results in less hardness than in the case of I

Card 1/2   UDC: 669.018.2

ACC NR: AP7002865

or II. To obtain maximal microhardness the optimal temperature is 400C. The data are summarized graphically. It was found that the breakdown of the supersaturated solid solution begins in the boundary zones of the grains. With increased temperatures and aging time, the breakdown spreads through the whole granular system. Orig. art. has: 5 figures and 1 table.

SUB CODE: 11/   SUBM DATE: 16Nov65/   ORIG REF: 003/   OTH REF: 003

Card 2/2

L 64511-65   EPA(s)-2/EWT(m)/EWP(b)/EWP(t)   IJP(c)   JD/JG

ACCESSION NR: AP5012600

UR/0051/65/018/005/0756/0762

AUTHOR: Semenov, R. I.; Strugach, B. A.

TITLE: On the possibility of determining the coefficients of intermediate coupling from the experimental data

SOURCE: Optika i spektroskopiya, v. 18, no. 5, 1965, 756-762

TOPIC TAGS: spectral fine structure, oscillation strength, optic transition, mercury, germanium, tin, lead

ABSTRACT: The authors show that it is possible to determine the coefficients of intermediate coupling for the sl configuration from the experimental values of the g-factors, the fine-structure energy intervals, and the ratios of the oscillator strengths of the electric dipole transitions. The single-configuration approximation is used, in which it is assumed that there are no inter-configuration interactions. The high accuracy required in the determination of the experimental data is pointed out. Comparison with the experimental data shows that the coupling coefficient determined independently of the experimental data referred to in this article coincide within ± 0.01. The various corrections which must be taken into account are discussed. For example, the g-factors, the fine-structure energy intervals, and the oscillator strength ratios must be determined accurate to 10^{-4} to attain this accuracy. Experimental data obtained with this accuracy are still

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L 64511-65

ACCESSION NR: AP5012600

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quite scanty. The requirements with respect to the ratio of the oscillator strengths of the intercombinational transitions are less stringent and an accuracy of 10--15% in these values is necessary to determine the coupling coefficients within ± 0.01. Among the corrections required are those for the higher order terms in the Wolfe formula for the fine-structure energy intervals (Phys. Rev. v. 41, 443, 1932), corrections for the diamagnetic and relativistic effects for the values of the g-factors, and corrections for interactions connected with the hyperfine struc- ture of the levels. Numerical values are given for Hg-I, Ge-I, Sn-I, and Pb-I. In the case of Hg, it is found that the 6s6d configuration is closer to the (j, j) coupling. "The authors are deeply grateful to N. I. Kaliteyevskiy, E. Ye. Fradkin, and A. M. Gutman for interest in the work and a discussion of the results." Orig. art. has: 2 figures, 8 formulas, and 4 tables.

ASSOCIATION: none

SUBMITTED: 19Mar64

NR REF SOV: 005

ENCL: 00

OTHER: 014

SUB CODE: OP

Card 2/2

STRUGACH, L.

Role of Nerve Reception in Fusarium Toxicosis

3 series of experiments conducted on cats and mice to determine role of nerve reception in the development of fusarium toxicosis are described in a review by L. STRUGACH of an article written by G.I. Getsov in <u>Trudy Kuybyshevskogo Meditsinskogo Instituta</u>, Vol 5, 1954. According to review, the 1st series of tests established the fact that changes in the organism caused by the development of fusarium toxicosis are the same regardless of locale of origin of infection, and toxins are absorbed by blood and carried to brain, and from there exert their effort thru the central nervous system by reflex and neurohumoral actions.

The 2nd series of tests, the review states, established that protective inhibition of the central nervous system, such as sleep induced by administration of sodium amytal, fails to prevent development of fusarium toxicosis, although it weakens effect, prolongs lives of animals, and at times saves their lives. The 3rd series of experiments, the review continues, established the fact that the depression of some skin receptor zones fails to prevent the development of the skin manifestation of the toxicosis, and that injection of a 0.5 percent solution of novocaine 30 minutes before administration of toxic fusarium extract saved lives of animals only in isolated cases.

STRUGACH's review was published in Issue No 25, 1956, of <u>Sovetskoye Meditskinoye Referativnoye Obozreniya</u>. (Comment: The source cited for original Getsov article not known to be available outside Soviet orbit.)

SO: FDDS 952, 1/6/56 Confidential

L 06490-67   EWT(m)/EWP(e)   WH
ACC NR: AP6028303   SOURCE CODE: UR/0363/66/002/006/1119/1123

26
25
/3

AUTHOR: Matveyev, M. A.; Khodakly, L. G.; Fisyuk, G. K.; Bolutenko, A. I.;
Strugach, L. S.

ORG: Institute of General and Inorganic Chemistry, BSSR (Institut obshchey i neorga-
nicheskoy khimii BSSR)

TITLE: Some properties of glasses based on the systems $BaO-TiO_2-B_2O_3$, $BaO-TiO_2-P_2O_5$,
$BaO-TiO_2-SiO_2$

SOURCE: AN SSSR. Izvestiya. Neorganicheskiye materialy, v. 2, no. 6, 1966, 1119-
1123

TOPIC TAGS: borate glass, phosphate glass, silicate glass, titanium dioxide

ABSTRACT: Glasses of the systems $BaO-TiO_2-B_2O_3$, $BaO-TiO_2-P_2O_5$ and $BaO-TiO_2-SiO_2$ were
synthesized from barium carbonate, ammonium monohydrogen phosphate, boric acid, ti-
tanium dioxide and quartz sand by melting at 1300-1400°C, and the properties of the
glasses were measured on annealed cylindrical specimens. The dependence of the volume
electrical resistivity, temperature of the start of softening, chemical stability (to
boiling in distilled water), density, and microhardness on the composition was meas-
ured, and the crystallizability was determined from tests in a gradient furnace and
from thermographic studies. Titanium was shown to decrease the electrical resistivity
of the glasses, particularly when it is present in a lower oxidation state. As a rule,

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ACC NR: AP6028303

not more than one compound is formed during the crystallization of the glasses
studied; in silicate glasses, barium silicotitanate $BaO \cdot TiO_2 \cdot SiO_2$ crystallizes out.
Low-melting glasses with a high electrical resistivity (10^{11}-10^{11} ohm cm) were syn-
thesized, and were found to have a satisfactory chemical stability. Orig. art. has:
5 figures and 2 tables.

SUB CODE: 11/ SUBM DATE: 28Jun65/ ORIG REF: 013/ OTH REF: 003

Card 2/2

YEFREMOV, Sergey Vasil'yevich; STRUGACH, Vladimir Abramovich;
    DUBINSKAYA, Vera Aronovna; VINOGRADOV, V.L., red.; PLEMYANNIKOV,
    M.N., red.; MARAKOSOVA, L.P., tekhn. red.

    [Intaglio printing] Glubokaia pechat'. Moskva, Izd-vo
    "Sovetskaia Rossiia," 1961. 372 p.   (MIRA 15:3)
                (Plate printing)

STRUGACHEV, A.A.; NEVLER, I.F.

Automatic line for press fitting a rim on the LBS9 flywheel.
Biul. tekh.-ekon. inform. Gos. nauch. i tekh. inform. 17 no.2:
31-32 '64.   (MIRA 17:6)

AUTHOR: Strugachev, V.Ya., Office Supervisor   SOV/111-59 1-14/35

TITLE: The Control Apparatus Must Be Improved (Sovershenstvovat apparat upravleniya)

PERIODICAL: Vestnik svyazi, 1959, Nr 1, p 13 (USSR)

ABSTRACT: The forthcoming organizational simplification also concerns the communications sector. The two present departments of electro communications and radio rediffusion networks in the oblast communications administration should be fused into one department engaged in electrocommunications, wire-broadcast networks and television. This department should be headed by a chief engineer of the directorate, while sub-departments should fall under the responsibility of senior engineers. The new department should also be concerned with the remaining independent repair points for TV and

Card 1/2

Country	:	USSR
Category	:	Soil Science. Cultivation. Improvement. Erosion. J
Abs Jour	:	RZhBiol., No 6, 1959, No 24672
Author	:	Orlovskiy, N. V.; Fesko, K. Ya.; Goppe, G. S.; Strugalova, Ye. V.
Inst	:	Tomsk University.
Title	:	Salination of Soils in the Aley Irrigation System and Measures of Prevention and Control Thereof.
Orig Pub	:	Tr. Tomskogo un-ta, 1957, 140, 82-91
Abstract	:	The Aley irrigation system is the largest in Altay Kray; its total area consists of 11,000 hectares. The Soil-Improvement Expedition of the Altay Agricultural Institute investigated on the irrigated territory of the Rubtsov Sugar-Beet Collective Farm causes of secondary salina-
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Country   : USSR
Category   : Soil Science. Cultivation. Improvement.
                            Erosion.   J

Abs Jour   : RZhBiol., No 6, 1959, No 24672

Author   :
Inst   :
Title   :

Orig Pub   :

Abstract   : tion and methods of its control. After 20
              years of irrigation, almost the entire ter-
              ritory is in the grip of secondary salina-
              tion processes of various intensity. The fun-
              damental reason of soil salination are the
              very costly mineralized subsoil waters. It is
              recommended: (1) a strict differentiation of
              irrigation; (2) realization of planned irriga-

Card   : 2/3

FESKO, K.Ya.; STRUGALEVA, Ye.V.

Deep plowing as means of regulating water and salt conditions
of soils of the Aley Irrigation System [with summary in English].
Pochvovedenie   no.1:104-112 Ja '59.   (MIRA 12:2)

1. Altayskiy sel'skokhozyaystvennyy institut.
                    (Aley Valley--Soils)

BURLAKOVA, L.M.; KOTEL'NIKOV, V.I.; STRUGALEVA, Ye.V.; AZARINA, V.A.

Distribution of erosion in the Altai Territory. Izv. Alt. otd. Geog. ob-va SSSR no.5:89-90 '65.   (MIRA 18:12)

1. Altayskiy sel'skokhozyaystvennyy institut.

STRUGALEVA, Ye.V.

Origin of salts in the Aley Steppe and their seasonal migration
due to irrigation. Izv. Alt. otd. Geog. ob-va SSSR no.5:125-127
'65.   (MIRA 18:12)

1. Altayskiy sel'skokhozyaystvennyy institut.

VIKTOV, R.V.; STHOGAL'SHCHIKOV, P.I.

Stmmendations for improving the quality of steel in the Middle
Ural Economic Council. Biul.tekh. ekon. inform.Gos.nauch. insl.
Instarauural Tekh.Inform. 18 no.1:10-12 Ja '65.
(MIRA 18:4)

KAMIENIECKA, Zofia; STRUGALSKA, Halina; WIERZBICKA, Irena

Ataxia-teleangiectasis syndrome. Neurol., neurochir., psychiat.
Pol. 14 no.3:539-540 My-Je '64

1. Z Kliniki Neurologicznej Akademii Medycznej w Warszawie
(Kierownik: prof. dr. med. I. Hausmanowa-Petrusewicz).

DANYSH, Ya. M., STRUGALSKIY, S. S., SLOVINSKIY, B.

"Study of γ-Quantum Generated in $\Pi^- - Xe$ Reaction with Π^- Mesons Momentum of 9 Gev/C"

report presented at the Intl..Conference on High Energy Physics, Geneva, 4-11 July 1962

Joint Inst. for Nuclear Research
Laboratory of High Energies, Dubna, 1962

CRANGHITIKIY, I. M., IVANOVSKAYA, I. A., KAUAIOK, T., PAPTIEV, A. S.,
OKHRIMENTO, L. S., PLOKISH, A., STRUGALSKIY, S. S., TIKHONOVA, L. A. and CHUVILO, I. V.

"Neutral Strange Particles Production on Xenon Nuclei in the 9 Gev/C π^- Meson Beam"

report presented at the Intl. Conference on High Energy Physics, Geneva,
4-11 July 1962

Joint Institute for Nuclear Research
Laboratory of High Energies

TSERKAL'SKIY, M. S.: Master Phys-Math Sci (diss) -- "The structure of the column of a wide atmospheric rainstorm". Moscow, 1959. 11 pp (Moscow Order of Lenin and Order of Labor Red Banner State U im M. V. Lomonosov), 100 copies (KL, No 13, 1959, 100)

STRUGALSKY, Z. S.

GENERAL DESCRIPTION OF THE MOSCOW UNIVERSITY ARRANGEMENT FOR THE STUDY OF
EXTENSIVE AIR SHOWERS AND PRELIMINARY RESULTS OBTAINED BY IT

S.N. Veronov, G.B. Khristiansen, A.T. Abrosimov, N. . Gorunov, V.A. Dmitriev,
G.V. Kulikov, Yu.A. Nechin, S.P. Soklov, V.I. Soloviva, K.I. Soloviev, Z.S. Stru-
galsky, .A. Forunov

1. In late 195 , at the Moscow State University an arrangement was put into opera-
tion for multipurpose studies of extensive air showers of cosmic rays.

2. The arrangement is a complex assembly of simultaneously operating physical
instruments (some 5000 Geiger-Muller counters covering an area of over 100 m^2, and
some 150 ionization chambers of various s apes covering a total area of 13 m^2, and
a diffusion chamber of area 0.04 m^2) and appropriate electronic equipment and photo-
graphic devices to record the instrument readings when an extensive air shower passes
through the arrangement. Most of this equipment is located in a specially erected
building. Three rooms of this building (~60 sp.m. in area each) have light roofing
of not more than 1.5 g/cm^2 and two rooms (25 m^2 and 80 m^2) are situated underground
at a depth corresponding to 20 and 40 metres water equivalent.

report presented at the international Cosmic Ray Conference, Moscow, 6-11 July 1959

STURGALSKY, Z.I.

STUDYING THE CORE STRUCTURE OF AN EXTENSIVE AIR SHOWER BY MEANS OF A DIFFUSION CHAMBER

S.N. Vernov, Z.I. Sturgalskiy, G.B. Khristiansen

1. By using a diffusion chamber with an of 80 x 80 cm^2 and a sensitive layer 6 cm high operating in conjunction with detector of extensive-air shower cores, a study was made of shower structure in the immediate vicinity of the axis.

2. A large number of cases were observed of the axis of an extensive air shower entering the diffusion chamber. In these casses we obtained the spatial distrubution of the particles relative to the direction of the axis.

3. The spatial distribution of the particle flux for showers with $N \approx 10^5$ is the form: $P(\mathscr{E}) \sim 1/r^n$ $n = 0.6 \pm 0.1$ 5 cm < r < 30 cm
                                       $n = 1.0 \pm 0.1$ 30 cm < r < 3 m.

4. The angular distribution of shower particles in a circle of radius 40 cm with the centre in the axis of the extensive shower, is seen to be very well represented as to relatively large angles $\vartheta \geq 5°$. Even at these small distances from the axis, the mean direction of the particle flux makes an angle of the order of several degrees with the direction of the axis.

5.   The experimental data on spatial and angular distribution are explainable in the framework of the nuclear-cascade picture of the development of a shower with account taken of the finite value of energy E_0 of elementary electron-photon avalances created by $\cdot$ -mesons and even ignoring the angular distribution of $\mathscr{L}\cdot$ -mesons in nuclear interaction.

Report present at the International Cosmic Ray Conference, Moscow, 6-11 July 1959

STRUGALSKIY, Z.S.

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D299/D304

3.2410 (1557, 3305, 2205, 9805)

AUTHORS: Vernov, S. N., Khristiansen, G.B., Abrosimov, A. T.,
             Goryunov, N. N., Dmitriyev, V. A., Kulikov, G. B.,
             Nechin, Yu. A., Sokolov, S. P. (deceased), Solov'yeva,
             V. I., Solov'yev, K. I., Strugalskiy, Z. S., and
             Khrenov, B. A.

TITLE: General description of the setup used for studying ex-
             tensive air showers and the provisional results ob-
             tained

SOURCE: International Conference on Cosmic Radiation. Moscow,
             1959. Trudy. v. 2. Shirokiye atmosfernyye livni i kas-
             kadnyye protesessy, 5-16

TEXT: A complex experimental setup was installed at Moscow State
University, consisting of a simultaneously operating physical appa-
ratus plus the corresponding radiotechnical equipment and photo-
graphical recording devices. The setup incorporates over 5000 Gei-
ger-Müller counters (forming a hodoscope), about 150 ionization

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General description of the setup...   S/6.../5/002/000/001/027
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chambers and a large diffusion chamber. The setup is designed for a comprehensive and simultaneous investigation of all the basic components (electrons and photons, nuclear-active particles and μ-mesons) of extensive air showers at sea level. The setup was designed in 2 different configurations: the first at the end of 1957, and the second at the beginning of 1959. Below, only the results obtained by means of the first setup are considered. The setup was located in a special building and in 10 mobile laboratories. The showers were registered by the system of hodoscoped counters. Part of the counters were shielded (those for detecting the nuclear-active particles and the μ-mesons) and the other counters were not shielded. The ionization chambers served to determine the lateral distribution of the electron-photon component and of the nuclear-active component. The microstructure of the electron component was studied by means of the diffusion chamber. Special measures were taken to ensure continuous and prolonged operation of the setup. The main units of the setup were automatically controlled, in particular the supply units and the photography system. The operation of the setup (as a whole) was controlled (triggered) by a selection system; in parti-

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General description of the setup ...
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cular, the showers were selected in accordance with the density of the electron flow and of the μ-mesons. The setup was in operation for about 2500 hours, yielding a large amount of experimental data which are still being processed. The probability theory (Baye's theorem) was used for determining the (x,y)-axes and the number of particles N of the shower; in addition the distribution function f(r) as well as other distribution functions were determined (r denoting distance). The values of x, y and N were found by means of a special electronic simulator. The density distribution of electrons and mesons was determined by means of formula

$$W(\rho) = \prod_i \left[1 - \exp(-\rho\sigma_i)\right]^{m_i} \cdot \exp\left[-\rho\sigma_i(n_i - m_i)\right]$$

where m_i is the number of counters which operate over an area σ_i, and n_i — the overall number of such counters. The energy E of the electron-photon component was determined by means of ionization

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General description of the setup ...   S/627/60/002/000/001/027
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chambers, shielded with lead (up to 6 cm thick). A very comprehensive picture of the particles and energies was obtained for showers whose axes fell within the system of 128 cubic detection chambers. The setup permits observing the central part of an atmospheric shower, whereby its several layers are simultaneously observed; this corresponds to the individual observation of the electron-photon, nuclearactive and μ-meson components. The processed material already yielded a fairly detailed picture of the structure of extensive air showers at sea level. Thus, the lateral distribution of particle flow in the individual showers was ascertained. It was found that the lateral distribution varies (in the 1 to 25 m range) from shower to shower; the average distribution is, in the range of 5 cm to 100 m, as follows:

$$\rho(r) = \begin{cases} \dfrac{K_1 N}{r^{0,6}} & K_1 = 3,3 \cdot 10^{-3}, \quad 0,05 \langle r \langle 0,3 \text{ m} \end{cases}$$

(cont'd)

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General description of the setup ...
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$$\left| \frac{K_2 N}{r} \cdot e^{-\frac{r}{60}} \right|, \quad K_2 = 2 \cdot 10^{-3}, \quad 0,3 \langle r \langle 100 \text{ m}$$

The lateral distribution of the electron-photon components also fluctuates from shower to shower. At distances smaller than 1.5 m, these fluctuations are particularly sharp. The nuclearactive components also exhibits considerable energy fluctuations. The fluctuations in the high-energy μ-mesons were not yet analyzed. The energy of the electron-photon component E_{eph} was calculated for a shower with number of particles equal to $(2.7 \pm 0.2) \cdot N\beta$, where β is the critical energy for air (72 Mev). The above value was obtained with an accuracy of appr. 30%. It was found that the energy of the nuclearactive component $E_n \simeq (0.5 \text{ to } 1.0) E_{eph}$. This value is, however, subject to considerable fluctuations and the experimental data are as yet insufficient to determine the contribution of the

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General description of the setup...

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D299/D304

nuclearactive component in showers. In addition, the above-mentioned fluctuations severely delimit the choice of a theoretical model for the development of showers. Particular attention was devoted to the structure of the shower in the immediate vicinity of its axis, where the particles of highest (for the particular shower) energy should be concentrated. This led to the discovery of a new effect: Groups of particles (from 4 to 20) travel in narrow beams (not exceeding 8 cm in diameter) in the neighborhood of the axis (or along the axis itself), whereby their lateral distribution shows that the beams are not due to Poisson fluctuations. The new effect can be explained as follows: Either the beam is the core of a "young" electron-photon shower which originates from a high-energy π^0-meson at a certain distance from the apparatus, or the beam consists of μ-mesons. These two possibilities are discussed. The observed irregularity in the lateral distribution of μ-mesons in the vicinity of the shower axis might be related to the new effect. There are 6 figures and 2 tables.

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